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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

GUHARAY, KARABI

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/607,162

Applicant(s)

BRATES ET AL.

Examiner

Karabi Guharay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment, filed on 26 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No: _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Amendment, filed on 26 July 2006 has been considered and entered.

Amendment of claim 1, overcomes the rejection of claim 1 under 35USC 112, second paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeji et al. (US 6724144), and further in view of Van Keijser et al. (US 6300729).

Regarding claim 1, Takeji discloses an arc discharge metal halide lamp (lines 62-66 of column 2 & 46-50 of column 4) comprising a discharge chamber (see Fig 2) having light permeable walls (11A & 11B) and tubes (11C) of a unitary single piece structure that is free of overlapping wall structures between the walls and the tubes and of being a selected shape (cylinder) bounding a discharge region of selected volume including therein a pair of end region wall portions (11C, lines 9-19 of column 3) through each of which a corresponding one of a pair of electrodes (20) are supported to have

interior ends (22) thereof positioned in the discharge region so that they are separated from one another along a common axis by a separation length, the said walls having portions thereof as wall sides between said end region wall portions with the wall sides having an effective operation inner diameter (diameter of region 11c) and having effective operation inner diameter over the separation length, where the ratio of separation length and the effective operation diameter is about 2, and with lengths of wall sides between the end region wall portions being greater than the effective operation inner diameter (lines 14-40 of column 4) the end region wall portion (wall portion of the region 11c) having inner and outer surfaces so that intersections thereof with planes containing the common axis (axis joining the electrodes) are smooth and have radii of curvature (Fig 3-4) there along equal to or less than half of that corresponding effective joined diameter ($R = 2.5$ mm, which less than half of the effective joined diameter (7 mm) and are separated from the interior end of the electrodes by more than 1mm (about $7/2 = 3.5$ mm which is about 2.8 mm, lines 14-27 of column 4), and ionizable materials provided in the discharge region of the chamber (lines 46-50 of column 4).

But, Takeji fails to disclose that the ratio is greater than 2.

However, in the same field of metal halide arc lamp, Keijser et al. teach an optimum value of the ratio of electrode distance over the diameter of the discharge vessel. Keijser further teaches that such ratio being greater than equal to 2, provides low wall load during lamp operation, which enhances the life of the lamp (lines 16-59 of column 2).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the value of ratio as greater than 2, since this will provide low wall load during operation of the lamp, thus enhance the life of the lamp.

Regarding claim 2, Keijser et al. disclose that the discharge chamber is formed of polycrystalline alumina (lines 37-40 of column 1). The same reason for combining art as in claim 1 applies.

Regarding claims 3-6, Keijser et al. disclose that the EA/Di is greater than equal to 2 but less than equal to 5.5 (lines 58-59 of column 2). The same reason for combining art as in claim 1 applies.

Regarding claims 7-11, Takeji discloses that the ionizable materials include metal halide s such as iodides of Ce and Na further teaches iodides of Dy instead of claimed Pr. However, Dy and Pr are both rare earth element.

Further, It is noted that applicant's use of iodide of Pr does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the rare earth element such as Pr or Dy.

Regarding claim 12, Takeji discloses an arc chamber 6 (lines 62-66 of column 2 & 46-50 of column 46, see Fig 2) comprising a discharge chamber having light permeable walls (11A & 11B) and tubes (11C) of a unitary single piece structure (11) that is free of overlapping wall structure and being of a selected shape (cylinder) bounding a discharge region of a selected volume including therein a pair of

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hemispherical shape end region wall portions through each of which a corresponding one of a pair of electrodes (20) are supported in corresponding one of the tubes (11C) to have interior ends (22) thereof positioned in said discharge region so that they are separated from one another along a common axis by a separation length, said walls having portions thereof as wall sides between said end region wall portions with an interior surface forming a truncated right cylinder having an inner diameter over said separation length in directions substantially perpendicular to said separation length such that a ratio of said separation length to said inner diameter is about 2, and with lengths of said wall sides between said end region wall portions being greater than said inner diameter, said end region wall portions each having inner surfaces having a radius (Fig 3-4) equal to half of said inner diameter which are separated from said interior ends of said electrodes by more than one millimeter (about $3.5 - 0.7 = 2.8$ mm, lines 14-27 of column 4) and ionizable materials (lines 46-50 of column 4) provided in said discharge region of said discharge chamber.

But, Takeji fails to disclose that the ratio is greater than 2.

However, in the same field of metal halide arc lamp, Keijser et al. teach an optimum value of the ratio of electrode distance over the diameter of the discharge vessel. Keijser further teaches that such ratio being greater than equal to 2 provides low wall load, which enhances the life of the lamp (lines 16-59 of column 2).

Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the value of ratio as greater than 2, since this will provide low wall load during operation of the lamp, thus enhance the life of the lamp.

Claim 13 recites essentially the same limitations of claim 2. Thus claim 13 is rejected as claim 2 (see rejection of claim 2).

Claims 14-17 recite essentially the same limitations of claims 3-6 respectively. Thus claims 14-17 are rejected as claims 3-6 (see rejections of claims 3-6).

Claims 18-22 recite essentially the same limitations of claims 7-11 respectively. Thus claims 18-22 are rejected as claims 3-6 (see rejections of claims 7-11).

Response to Arguments

Applicant's arguments filed 26 July 2006 have been fully considered but they are not persuasive.

In response to applicant's argument presented on page 7 paragraph 2 of the Remark, that terminal plate is anything but irrelevant, *because" without terminal plates the discharge chamber walls do not bound a selected volume, arc tube 6 bound no volume at all without terminal plate as the end wall portions that would remain without those plates present will leave that tube open ended so as to not bound any finite volume"*.

In response examiner respectfully disagrees, because even though two ends of the discharge chamber are open, it will contain a selected volume since the open ended structure 11 has a specific geometrical volume and it will bound that amount of air or any gas inside such volume. Applicant's claimed discharge chamber need to be sealed after inserting the electrodes (26a, 26b, see Fig 2). Without those seals discharge chamber is open ended.

In contrast to applicant's claimed discharge chamber, Takeji's chamber has two side tubes having much shorter length.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K. Guharay
Karabi Guharay
Primary Examiner
Art Unit 2879
11/9/06